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244. Proposed by G. B. M. ZERR, Ph. D., Professor of Mathematics in Central Manual Training School, Philadelphia, Pa.

Find the volume common to the solids bounded by the surfaces

$$x^{\frac{2}{3}} + y^{\frac{2}{3}} + z^{\frac{2}{3}} = a^{\frac{2}{3}} \quad \text{and} \quad x^{\frac{1}{3}} z^{\frac{2}{3}} = (a^{\frac{1}{3}} - x^{\frac{1}{3}})(x^{\frac{2}{3}} + y^{\frac{2}{3}}).$$

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### MECHANICS.

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205. Proposed by PROF. R. D. CARMICHAEL, Anniston, Ala.

Given two points  $A$  and  $B$  not in the same horizontal nor in the same vertical line; to find the path from  $A$  to  $B$  along which a particle will slide from rest under the force of gravity alone so that the average velocity along the curve shall be a maximum.

206. Proposed by W. J. GREENSTREET, M. A., Editor of The Mathematical Gazette, Stroud, England.

A rigid square  $ABDC$  made by smooth wires is fixed with  $A$  vertically above  $D$ . Two small equal spherical elastic beads slide down  $BD$ ,  $CD$ , starting simultaneously from  $B$  and  $C$ . Find the ratio of their velocities of approach and separation at  $D$ , and how far they will separate after impact.

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### NOTES AND NEWS.

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The eminent mathematician, Yoshio Mikami, is translating Dr. Halsted's *Rational Geometry* for publication in Japan. F.

Dr. G. B. M. Zerr has been appointed Professor of Mathematics in the Central Manual Training School of Philadelphia, at a salary of \$2000 per year. F.

Professor G. W. Greenwood has resigned his position as Professor of Mathematics in Roanoke College and gone into business in Dunbar, Pa. He will, however, continue his contributions to the MONTHLY. F.

Miss Hazel Anderson, who has just received the Master's degree at the University of Chicago, will be Instructor in Mathematics at the Manual Training High School, Indianapolis, Ind. S.

Mr. G. R. Clements, who took the Master's degree at the University of Chicago in August, has been appointed to an Instructorship in Mathematics at Williams College, Williamstown, Mass. S.

Miss Mary E. Wells, who received the Master's degree at the University of Chicago in June, returns to an Instructorship in Mathematics at Mt. Holyoke College, where she graduated in 1906. S.

Dr. R. L. Boerger, formerly instructor at the University of Missouri, has been appointed to an Instructorship in Mathematics at the University of Illinois. Mr. Boerger received the Doctor's degree at the University of Chicago in August, 1907. S.

Mr. John W. Mitchell has been appointed Instructor in Mathematics at the Agricultural and Mechanical College of Texas. S.

Dr. Louis Ingold returns to the University of Missouri as Instructor in Mathematics, after a two years' leave of absence, during which time he has been Fellow in Mathematics at the University of Chicago, where he has just received the Doctor's degree. S.

Dr. W. H. Bussey, who for two years has been instructor in Barnard College, Columbia University, has been elected to an Assistant Professorship in Mathematics at the University of Minnesota. Mr. Bussey took his Doctorate at the University of Chicago in 1906. S.

Dr. N. J. Lennes has been elected to an Instructorship in Mathematics at the Massachusetts Institute of Technology. Mr. Lennes has been for some years teaching mathematics in the Chicago high schools, and has just taken his Doctorate at the University of Chicago. S.

Dr. F. W. Owens has been made Instructor in Mathematics at Cornell University. For two years Mr. Owens has been teaching mathematics at the Academy of North Western University at Evanston, Ill. He took his Doctorate at the University of Chicago on August 30, 1907. S.

Dr. N. R. Wilson, who received his degree at the University of Chicago at the August Convocation, returns as Associate Professor of Mathematics at the University of Manitoba, Winnipeg, Manitoba. He has been there several years and was recently promoted to Associate Professor. S.

E. J. Wilczynski, Ph. D. (Berlin), Associate Professor of Mathematics in the University of California, has been appointed to a similar position in the University of Illinois. Professor Wilczynski is one of the best mathematicians of America. He has been both research assistant and research associate of the Carnegie Institute of Washington, and the 1904 Year Book contains the following about his work: "The general character of these investigations places them at the beginning of a new kind of geometry, a projective geometry which does not confine itself to the consideration of the algebraic cases, as has hitherto been the case, but which proves theorems of a more general nature by the use of differential equations, resembling in that respect the general theory of surfaces." Professor Wilczynski is chairman of the San Francisco Section of the American Mathematical Society, and is the author of *Projective Differential Geometry of Curves and Ruled Surfaces*, recently published by B. G. Teubner of Germany. M.

#### ERRATA.

In solution of problem 197, Mechanics, page 107, the following corrections should be noted:

Line 7, for  $v_1$  read  $v_2$ ; line 8, for  $v_2$  read  $v_1$ ; line 9, for  $v_1^2/r$  read  $v_2^2/R$ .